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FIVE NEW SPECIES BELONGING TO GENUS HARMOLITA (HYMENOPTERA).....*W. J. Phillips and Fred W. Poos.*

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VOL. XIV.] OCTOBER, 1922. [No. 13.

Five New Species Belonging to the Genus *Harmolita* Motschulsky.

(*Isosoma* Walker et Auct.)

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THREE of the five species described in this paper (viz., *swezeyi*, *panici* and *phalaridis*) would fall within the genus *Harmolita* as restricted by Phillips and Emery.[2] Grahan[3] has more recently redefined the genus, however, and all five of the new species plainly fall within the limits as he has defined them.

At the time this genus was revised by Phillips and Emery, the senior author had seen only a few specimens of *H. cinnæ* (n. sp. described herewith), and since the species differed somewhat from the usual type of *Harmolita*, he did not consider it advisable to broaden the scope of the genus to include this species. Since that time several similar species have come under observation and they seem to be more closely related to *Harmolita* than to *Eurytoma* from a biological standpoint, as well as from the standpoint of external characters and the character of the ovipositor. The writers fully agree with Gahan that it is more advisable to include these species in the genus *Harmolita* than to erect a new genus for their reception.

The principal characters assigned to the genus by Gahan are as follows: Abdomen of female elongate, conical or subfusiform, with segments more or less subequal, the fourth segment (when propodeum is considered a thoracic segment) never greatly enlarged as in *Eurytoma*. Occiput slightly concave and immargined. Antennæ inserted at or above middle of face; flagellum weakly clavate;

1. Order Hymenoptera, family Eurytomidæ.
2. U. S. Nat. Mus., vol. 55, pp. 443-471, plates 39-48.
3. Proc. U. S. Nat. Mus., vol 61, 1922, art. 24, p. 7.

funicle usually five-jointed and club three-jointed, though in some cases funicle is six-jointed and club two-jointed. Propodeum not or scarcely longer than scutellum, not sharply declivous, usually rugosely sculptured; with a more or less distinct median, longitudinal depression. Sculpturing of head and dorsum of thorax either reticulate and shining, rugulose punctate without umbilicate punctures or rugulose with a few more or less indefinite umbilicate punctures.

Prof. C. R. Crosby, of Cornell University, kindly placed his specimens and notes on *H. phalaridis* at the disposal of the writers. Professor Crosby found that this species has two generations a year, each generation confining itself to *Phalaris arundinacea*. The remaining species were reared from dried grasses collected in the field. No further observations on their biology have thus far been made.

Acknowledgment is made to Mr. A. B. Gahan of the United States National Museum for his kindly criticism of the manuscript.

Harmolita swezeyi, n. sp.

(Pl. XXXVI, figs. 2 and 5; pl. XXXVII, fig. 7.)

Female. Length, 2.90 mm. Prescutum reticulately lineolate and without broad, shallow impressions or umbilicate punctures. Pronotal spots large, occupying about one-half of the anterior margin of prothorax, spots dull yellowish. Sometimes entire thorax and propodeum brownish. Propodeum without a distinct margined, median, longitudinal groove, though there is usually a distince median longitudinal depression. Propodeum rugulose anteriorly and usually granulose in the remaining portion. Spiracular carinæ usually distinct but weak. Abdomen equal to or slightly longer than head and thorax combined; conically pointed; second segment equals one-fourth length of abdomen; remaining segments subequal, though five is longest and three shortest. Legs in black specimens are black except at knees and tarsi, which are luteous; in brownish specimens the legs approach the color of the thorax, knees and tarsi lighter.

Antennæ: Funicle five-jointed; first funicle plus ring joints longer than pedical; all of funicle joints usually distinctly longer than broad; middle joint of club apparently quadrate; scape and pedical yellowish.

Species medium to small. Median line of face below insertion of antennæ without markings.

Males. Unknown.

This species will run to the couplet separating *agrostidis* and *websteri* in the Phillips and Emery table of species, but may be readily distinguished from either species by the yellowish scape and the longitudinal depression in the propodeum.

Type locality. Honolulu, Hawaii.

Type. Cat. No. 25,471, U. S. N. M.

Described from thirteen females reared from stems of Bermuda grass (*Cynodon dactylon*), in Honolulu, Hawaii, by Mr. O. H. Swezey.

Harmolita panici, n. sp.

(Pl. XXXVI, figs. 7 and 8; pl. XXXVII, figs. 6 and 8.)

Female. Length, 3 mm. Prescutum rugulose; pronotal spots small, occupying one-half or less of the anterior dorsal margin of the prothorax; spots dull. Propodeum with or without a distinct continuous, median, longitudinal groove, though there is a distinct indication of a groove anteriorly; if groove is continuous it is faint and very shallow, and not very clearly margined; rugulose within and laterad of groove. Abdomen rather slender; longer than head and thorax combined; second segment comprising one-fourth to one-fifth length of abdomen exclusive of 1; 3 shortest; 4, 5 and 6 approximately the same length. Legs black except tarsi, knees and the lower face of the front femora, which are luteous.

Antennæ: Funicle five-jointed; first segment plus ring joint slightly longer than pedicel; first and second segment about equal in length; 3, 4 and 5 about equal in length, but each shorter than either 1 or 2; all segments longer than broad. Antennæ black; median line of face below insertion of antennæ without markings.

Species small to medium.

Male. Length, 2.51 mm. Prescutum as in female. Pronotal spots minute, scarcely visible from above. Propodeum without a distinct median groove; rugulose. Petiole granulose, somewhat shorter than hind coxæ. Legs colored as in female except that front femora are darker.

Antennæ: Scape almost same width throughout, as seen in lateral profile, with no distinct shoulder near distal extremity. First, second and third flagellar joints with two to three annulations at distal extremity; bristles numerous and short, scarcely half the length of the segments.

The individuals of this species without the propodial groove run to couplet 14 in the Phillips and Emery table of species, but can be easily separated from *hordei* by having the legs not red, and from *tritici* by being a smaller species and the sculpturing being much smoother. The individuals that have the propodial groove run to couplet 18, in which *vaginicola* and *secalis* are separated. Both of these species are longer and more coarsely sculptured; *vaginicola* has yellowish antennal scapes and the propodeum of *secalis* is granulose, which will easily separate them from *panici*.

Type locality. Charlottesville, Va.

Type. Cat. No. 25,472, U. S. N. M.

Described from three females and one male reared from stems of *Panicum clandestinum* at Charlottesville by the junior author.

Harmolita phalaridis, n. sp.

(Pl. XXXVI, figs. 6 and 9; pl. XXXVII, figs. 1 and 2.)

Female. Length, 3.70 mm. Prescutum reticulately lineolate with numerous broad, shallow impressions; very few such impressions on pronotum, but scutellum is quite thickly pitted. Pronotal spots bright and large, occupying about two-thirds anterior dorsal margin of prothorax. Propodeum with a distinct, continuous, median, longitudinal groove, which is usually margined; usually deep throughout, though often shallow posteriorly; numerous cross rugæ within groove, but no indication of central carina; very rugulose laterad of groove; spiracular carinæ prominent and spiracular area usually well de-

fined. Abdomen same length as head and thorax combined; segments 3 and 5 about of equal length; 4, 6 and 7 about equal in length and each usually longer than either 3 or 5. Legs: All knees, tibiæ and tarsi usually reddish brown, femora blackish.

Antennæ: Funicle five-jointed; first funicle joint plus ring joint about twice as long as pedicel; first joint of funicle slender and same size throughout, the distal tip somewhat flaring; all of funicle joints distinctly longer than broad; club joints also longer than broad; antennæ black and very slender.

Species medium in size.

Male. Length 2.60 mm. Prescutum as in female, but there are few thoracic punctures; pronotal spots large and bright. Propodeum with or without a groove; groove when present is often rather poorly defined; propodeum usually very rugose, though it may sometimes be granulose; spiracular area usually well defined. Petiole usually about twice as long as broad, granulose and extends beyond the tip of the coxæ. Legs: All knees and tarsi testaceous; front tibiæ usually reddish brown.

Antennæ: Flagellum with peticel longer than head and thorax combined; hairs on first flagellar joint approximately same length as those on last joint; last joint bears a slender tubercle at end about twice as long as broad. Scape, exclusive of base, a little over twice as long as broad, broadest about center, as seen in lateral profile; scape as seen in lateral profile nearly twice as broad as first flagellar joint. There are four or more annulations at each articulation of the flagellum.

This species runs to *dactylicola* in the Phillips and Emery table of species, but the females may be separated by the following characters: *H. phalaridis* has more densely pitted scutellum; propodeum more rugulose; groove deeper and same width throughout; spiracular carinæ more prominent; tibiæ usually reddish brown; first funicle joint of antennæ cylindrical, very slender and distal extremity somewhat flaring at tip. All segments of antennæ more slender than in *dactylicola.*

Type locality. Ithaca, N. Y.

Type. Cat. No. 25,473, U. S. N. M.

Described from many males and females reared from stems of *Phalaris arundinacea* collected at Ithaca, N. Y., by Professor Crosby and the junior author, and from specimens reared from stems of *Phalaris* sp. collected at Elk Point, S. Dak., by Mr. C. N. Ainslie of the U. S. Bureau of Entomology.

Harmolita cinnæ, n. sp.

(Pl. XXXVI, figs. 1 and 3; pl. XXXVII, figs. 3 and 4.)

Female. Length, 3.80 mm. The whole thorax somewhat rugulose and more or less distinctly umbilicately punctured, the punctures shallow and usually not well defined; prescutum sometimes not umbilicately punctured in anterior third; pronotal spots small, occupying about one-third anterior dorsal margin of pronotum, visible from above. Propodeum with a deep, margined, continuous, median, longitudinal groove of medium width; groove with numerous cross rugæ and usually with a central longitudinal carina; very rugulose laterad of groove; spiracular area usually well defined, though sometimes the spiracular carinæ are weak. Abdomen equal to or slightly longer than head and thorax combined, and almost as pointed as the average *Harmolita;* seg-

ment 2 occupies between one-third and one-fourth the length of abdomen; segments 3, 4, 5, 6 and 7 approximately equal in length. Legs often variable in color; sometimes the legs are black throughout except the knees, front tibiæ and all tarsi, which are luteous; perhaps more often the basal third to half of front and middle femora and basal two-thirds of hind femora blackish; all tibiæ, knees and tarsi almost reddish brown.

Antennæ: Funicle five-jointed; club three-jointed; first funicle joint plus ring jointly nearly twice as long as pedicel; all segments longer than broad; the first two funicle joints longest, the remaining ones of approximately the same length. Antennæ black. Median line of face below insertion of antennæ slightly elevated; dorsally it appears almost carinate.

Species medium to large.

Male. Length, 2.90 mm. Sculpturing of thorax very much the same as in female, except that the umbilicate punctures are not nearly so distinct; pronotal spots very small, often scarcely visible from above. Propodeum variable; there may be a deep, rather broad, margined, median longitudinal groove, very rugulose within and laterad of groove, or the groove may not be continuous and shallow, and it may be granulose within and laterad of the groove. In the latter case the petiole is usually granulose; when the propodeum is very rugulose the petiole is usually somewhat rugulose. Petiole long, slender; the tip of the hind coxæ often extending only to about the middle of petiole. Legs colored as in female.

Antennæ: Longer than head and thorax combined; scape as seen in profile thickened somewhat at center; no distinct club; first segment of flagellum approximately as long as scape; the remaining segments about of equal length; segments excised with about three annulations at the distal extremity of all except distal segment.

Type locality. Youngstown, Ohio.

Type. Cat. No. 25,474, U. S. N. M.

Described from many females and eight males reared from stems of *Cinna arundinaceæ* collected at Youngstown, Ohio, by Mr. W. T. Emery and at Niles, Ohio, by the junior author.

Harmolita phalaricola, n. sp.

(Pl. XXXVI, figs. 4 and 10; pl. XXXVII, fig. 5.)

Female. Length, 3.52 mm. Prescutum somewhat rugulose, and the whole thorax bearing numerous but rather indefinite umbilicate punctures. Pronotal spots dull, minute, scarcely visible from above.

Propodeum with a distinct, continuous, deep, medium to narrow longitudinal median groove; groove not distinctly margined throughout; very rugulose within and laterad of groove; spiracular area not clearly defined by spiracular carinæ. Abdomen short and thick, approaching ovate; slightly shorter than head and thorax combined; segment 2 occupying between one-third and one-half dorsal length of abdomen; segments vary in length as is common in *Harmolita,* due to telescoping of segments when the insects die; 3 and 4 often nearly same length; 5, 6, and 7 often about same length, but shorter than either 3 or 4. Legs: Basal half of front and basal two-thirds of middle and hind femora black; remaining portion of legs usually reddish brown.

Antennæ: Funicle apparently six-jointed and club two-jointed; first funicle plus ring joint about twice the length of the pedicel; segments 4, 5 and 6 about quadrate; club joints nearly quadrate also.

Species medium to large.

Males. Unknown.

Type locality. Elk Point, South Dakota.

Type. Cat. No. 25,475, U. S. N. M.

Described from ten females reared from stems of *Phalaris* sp. collected at Elk Point, S. Dak., by C. N. Ainslie of the United States Bureau of Entomology.

PLATE XXXVI.

1. Ovipositor of *H. cinnæ.*
2. Ovipositor of *H. swezeyi.*
3. Propodeum of *H. cinnæ.*
4. Propodeum of *H. phalaricola.*
5. Propodeum of *H. swezeyi.*
6. Propodeum of *H. phalaridia.*
7. Propodeum of *H. panici.*
8. Ovipositor of *H. panici.*
9. Ovipositor of *H. phalaridis.*
10. Ovipositor of *H. phalaricola.*

PLATE XXXVI.

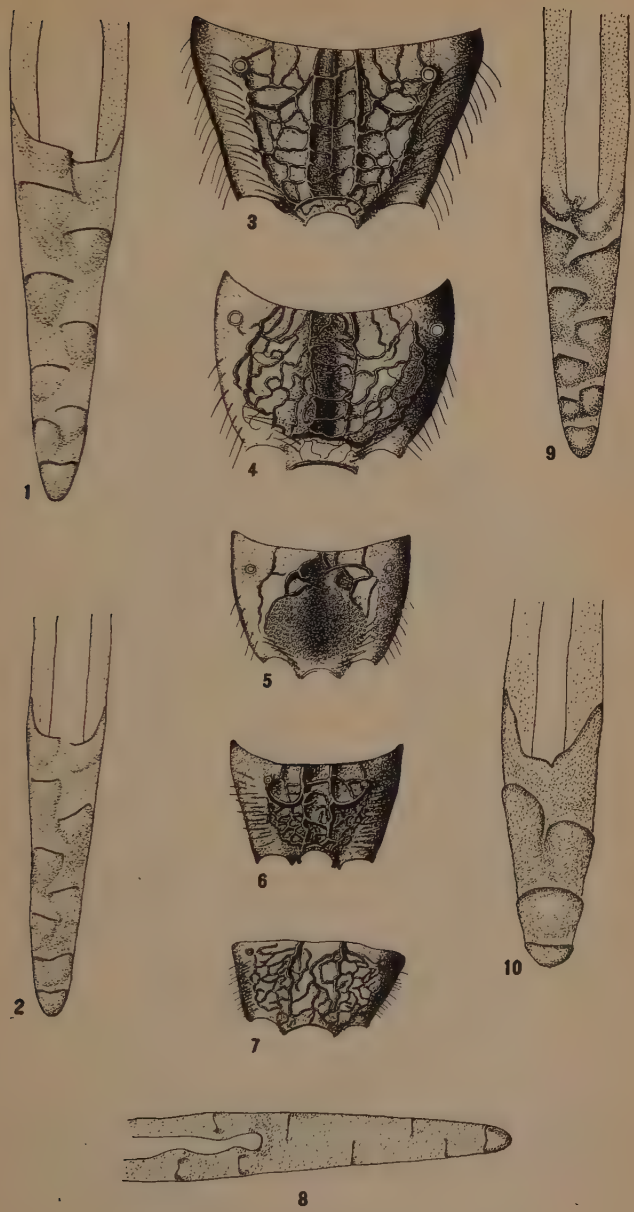

PLATE XXXVII.

1. Antenna of the male of *H. phalaridis.*
2. Antenna of the female of *H. phalaridis.*
3. Antenna of the male of *H. cinnæ.*
4. Antenna of the female of *H. cinnæ.*
5. Antenna of the female of *H. phalaricola.*
6. Antenna of the male of *H. panici.*
7. Antenna of the female of *H. swezeyi.*
8. Antenna of the female of *H. panici.*

PLATE XXXVII.